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EXAMINER	
LELE, TANMAY S	
ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 01/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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PN

Office Action Summary	Application No.	Applicant(s)	
	09/253,976	KIM ET AL.	
	Examiner	Art Unit	
	Tanmay S Lele	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5 6,9-14,17-21,and 23-25* is/are rejected.

7)☒ Claim(s) *3,4,7,8,15,16,22 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 October 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Arguments

1. Applicant's arguments filed 29 October 2002 have been fully considered but they are not persuasive.

2. Regarding claim 1, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant attempts to over the rejection, by stating, "[the] Smith does not teach a 'time switching transmission controller ... for mutually exclusively switching .., between the plurality of transmitters in non-overlapping time intervals, thereby providing transmission time diversity.'" As stated in the previous Office Action (paper number 7, page 2), Smith does posses the idea of time diversity. Frequency hopping schemes inherently have the concept of "time diversity," as the same data stream can be re-transmitted on a different frequency, at a latter time (as the Smith reference teaches). The Smith reference states this concept of "different time" (column 6, lines 38 – 46) and thus, as the switch cannot be at two positions at once, time diversity is inherent.

Applicant further attempts to overcome the rejection by stating Zehavi does not "teach time switching transmission diversity as recited in Claim 1, " and adds, "[The] output of the modulators are not switched between transmitters, but are instead summed and sent to one transmitter 38." As stated in the previous Office Action (paper number 7, page 2), the Zehavi reference is providing baseband information to be up-converted and thus must be viewed with the Smith reference (which provides for the over-air or physical channel transmission) and not in a piecemeal manner (note the previous Office Action specifically states Zehavi's baseband

section in the phrase, "up to the summer"). Zehavi states transmission time diversity in that the memory element stores the current data stream until the next time frame is to be sent (hence, "k" is delayed by one frame and thus further arises the concept of transmission time diversity, as further elaborated in column 7, lines 11 – 22). Hence, for all the above reasons, the Examiner is not persuaded by the Applicant's argument that the references do not teach the features disclosed.

3. Regarding claims 9, 11, and 17, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant attempts to overcome the rejection by stating, "[The] Examiner maintains that Ames and/or Smith teaches the Claim 9 recitation of "a reception controller for selecting the estimated phase and time values according to the switching cycle and pattern of a TSTD...signal from a base station". Examiner respectfully disagrees with this conclusion. As stated in the previous Office Action (paper number 7, page 6, lines 8 – 9), Madhow teaches of "... a reception controller for selecting the estimated phase (column 5, lines 24 – 25)." Examiner's introduction of the Ames reference was to prove that the concept of time determination was possible by a controller (as detailed in the previous Office Action, page 6, lines 11 - 14) and hence should not be viewed by itself.

Applicant further states, "the cited material of Smith in the Office Action (col. 7, lines 31-41) appears to relate to the controller 32 controlling RF switch 24 such that transmission

carriers are selected according to a selected frequency hopping scheme. As with Ames, it likewise has nothing to do with the selection of estimated phase and time values (as received via the pilot signal) according to the switching cycle and pattern of a TSTD signal, as recited in Claim 9." As stated in the previous Office Action (paper 7, page 6), Smith, when viewed with Ames and Madhow, teaches of "with respect to the switching pattern of the TSTD." The recited lines of Smith (column 7, lines 31 – 41) teach again of controller that is capable of selection of a frequency pattern according to a hoping scheme (as detailed above, Smith inherently incorporates the concept of "time switched transmission."). Thus, when the combination of the references are made is viewed as a whole, they teach, "a reception controller for selecting the estimated phase and time values according the switching cycle and pattern of a TSTD... from a base station." Hence, for all the above reasons, the Examiner is not persuaded by the Applicant's argument that the references do not teach, recite, or suggest the features disclosed when viewed as whole.

DETAILED ACTION

Drawings

4. In order to avoid abandonment, the drawing informalities noted in Paper No. 7, mailed on 19 June 2002, must now be corrected. Correction can only be effected in the manner set forth in the above noted paper. Please see form PTO-948, "Notice of Draftsperson's Patent Drawing Review," of paper number 7 for additional corrections not addressed by Applicant.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 22 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 22 and 26, it is not understood why the "control signal generator generates the switch controlling signal with length equal to an integer multiple of an orthogonal code length," if the system has no spreader and hence no need for orthogonal codes. For purposes of examination, it was assumed that there the control signal generator did not need to generate the switch controlling signal with length equal to an integer multiple of an orthogonal code length. Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. Claim 19 rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al (Smith, US Patent No 6,006,075).

Regarding claim 19, Smith teaches of a transmitting apparatus in a mobile communication base system (column 1, lines 44 – 46), comprising: a signal generator for generating a transmission signal; two or more antennas; two or more RF transmitters, each of the RF transmitters connected to a respective one of the antennas, for converting an input signal to

an RF signal and outputting the RF signal through the respective antenna (as seen in Figure 6 and described in column 11, lines 13 – 33); and a time switching transmission controller for alternately switching the transmission signal to one of the FT transmitters for a fixed, non-overlapping predetermined time unit to provide time switching transmission diversity (TSTD) (column 6, lines 38 – 46 and column 12, lines 52 – 57).

Regarding claim 20, Smith teaches all the claimed limitations as recited in claim 19. Smith further teaches of wherein the time switching transmission controller comprises: a controller having pre-stored switching patterns (column 7, lines 31 – 44), for generating a switch controlling signal based on one of the pre-stored switching patterns, said controlling signal being generated at said fixed non-overlapping predetermined time unit (column 12, lines 52 – 57); and a switch connected between the signal generator and an input terminal of each of said two or more RF transmitters, for switching the transmission signal to one of the RF transmitters based on the switch controlling signal (as seen in Figures 4 and 6).

Regarding claim 23, Smith teaches of a transmitting method in a mobile communication base station system (column 1, lines 44 – 46), having two or more antennas and two or more RF transmitters, each of the RF transmitters connected to a respective one of the antennas for converting an input signal to an RF signal and outputting the RF signal through the respective antenna, comprising the steps of: generating a transmission signal (as seen in Figure 6 and described in column 11, lines 13 – 33); and alternately switching the transmission signal to one of the RF transmitters for a predetermined time unit to provide time switching transmission diversity (TSTD) and transmitting the transmission signal (column 6, lines 38 – 46 and column 12, lines 52 – 57).

Regarding claim 24, Smith teaches all the claimed limitations as recited in claim 23. Smith further teaches of wherein the alternately switching step comprises the steps of: generating a switch controlling signal based on a switching pattern at the predetermined time unit (column 7, lines 31 – 44); and switching the transmission signal to the RF transmitter to be connected corresponding antenna based on the switch controlling signal (as seen in Figures 4 and 6 and column 12, lines 52 – 57).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 2, 5, 6, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (Smith, US Patent No 6,006,075) in view Zehavi (Zehavi, US 6,185,199). Smith teaches of a transmitting apparatus for a wireless communication system (column 1, lines 44-46), comprising of at least two antennas, a plurality of RF transmitters operatively coupled to the antennas for converting an input signal to an RF signal and outputting the RF signal through the antennas and a switching transmission controller (called base-band switch and controller) coupled between "a signal source" and the RF transmitters, for mutually exclusively switching an output between the plurality of transmitters (see in Figure 6 and described in column 11, lines 13- 33). Smith further teaches of of non-overlapping time intervals (column 12, lines 52- 57: as with a TDMA system). Smith does not teach of a spreader for spreading a transmit signal and of

mutually exclusively switching an output of the spreader between the plurality of transmitters in non-overlapping time intervals, thereby providing transmission time diversity. In a related field of endeavor, Zehavi teaches of a system that uses a spreader (for spreading a transmitted signal) (seen in Figure 2, described in column 6, lines 58-65), and a delay mechanism to achieve transmission time diversity (seen in Figure 2, described in column 6, lines 32- 40). It would have been obvious to one skilled in the art, at the time of invention, to have replaced the information signal source in Smith's wireless communication system, with the system described by Zehavi (up to the summer, as the second transmitter would obviously add redundancy), to achieve transmission and time switched diversity. The motivation for this combination, as provided by Zehavi, is to provide a time delayed version of the signal as a diversity scheme (note that Zehavi accomplishes this with a memory delay buffer, while Smith's structure could achieve this using the switch, which as commonly known in the art, cannot change instantaneously and further is stated, by Smith, to be used in TDMA/GSM schemes and hence switched without time overlap).

Regarding claim 2, Smith in view of Zehavi teaches all the limitations as recited in claim 1. Smith further teaches of the time switching transmission controller comprising of a controller having pre-stored switching patterns (column 7, lines 31 – 44), for generating a switch controlling signal based on one of the pre-stored switching patterns (column 11, lines 28 – 33) said controlling signal being generated at the fixed non-overlapping predetermined time interval (column 12, lines 52 – 57; implies as systems using GSM and TDMA, both requiring non-overlapped time frames) a switch connected between an output terminal of the spreader and an input terminal each of the plurality of RF transmitters, for switching the output of the spreader to

a corresponding RF transmitter based on the switch controlling signal (as noted in claim 1, Smith in view of Zehavi).

Regarding claim 5, Smith teaches of a transmitter device in a mobile communication system, comprising of a plurality of RF transmitters operatively coupled to the antennas for converting an input signal to an RF signal and outputting the RF signal through the antennas, a switching transmission controller connected between the "information signal source" and the RF transmitters (see in Figure 6 and described in column 11, lines 13- 33), for switching the output between the RF transmitters in non-overlapping time intervals (column 12, lines 52- 57; as with a TDMA/GSM system). Smith does not explicitly teach of a plurality of dedicated channel transmitters, each channel transmitters, a dedicated channel spreader for spreading a dedicated channel signal and a pilot channel transmitter having a symbol distributor for distributing pilot channel symbols to the antennas, a plurality of orthogonal spreaders for spreading the distributed symbols by different orthogonal codes, and a plurality of PN spreaders for spreading the orthogonally spread signals by PN codes and outputting the PN spread signals to the RF transmitters. In a related art, Zehavi teaches of a system that has a plurality of dedicated channel "transmitters" (defined to be system that encodes a data stream to be up-converted onto an RF carrier, depicted in Figure 2 and described in column 6 lines 32 - 40), and shows dedicated channel spreaders (seen in Figure 2, described in column 6, lines 58 - 65). Zehavi further teaches that a pilot signal can be transmitted with different PN codes (column 9, lines 50 – 59). It would have been obvious to a person skilled in the art, at the time of invention, to have modified Smith's "information signal source" with the system described by Zehavi (solely the channel transmitters) to achieve a the transmit and time diversity, with means for

generating a pilot tone. The motivation for a such a combination, as suggested by Zehavi, would be to create a system that has time diversity as well as provisions to generate a pilot tone to aid in the demodulation process.

Regarding claim 6, Smith in view of Zehavi teach all of the claimed the limitations as described in claim 5. Smith further teaches of a controller having switching patterns (column 7, lines 31 – 44), for generating a switch controlling signal based on a switching pattern at a predetermined time (column 11, lines 28 – 33). Smith in view of Zehavi, further teach that a switch connected between an output terminal of the spreader and input terminals of the RF transmitters, for switching the output of the spreader to a corresponding RF transmitter based on the switch controlling signal.

Regarding claim 13, Smith teaches of switchedly supplying a signal to a corresponding antenna (taken to be a transmitter line–up; see Claim Rejections –35 USC 112, section 7 for details) selected from at least two antennas (column 11, lines 13 – 33) in non-overlapping time intervals thereby generating a TSTD signal (column 12, 52 – 57) according to a predetermined switching pattern (column 7, lines 31 – 41). Smith does not explicitly teach of spreading a transmit signal by a corresponding orthogonal signal for a dedicated channel and spreading the orthogonally spread signal by a PN code. In a related art, Zehavi teaches of spreading a data source on a dedicated channel by an orthogonal PN code (Walsh codes) (column 8, lines 5 – 15; Figure 2 depicts first a multiplication by Walsh-orthonornmal- code then a PN code as claimed). Therefore, it would have been obvious to a person skilled in the art at the time of invention to have replaced the "info signal source" as described by Smith, with the system described by Zehavi, to achieve a switched transmit, time diversity system. The motivation, as provided by

Zehavi, for such a combination, to create a diversity scheme using time gated (switched) data transmission method to over come fading.

Regarding claim 14, Smith, in view of Zehavi, teach all the claimed limitations as described in claim 13. Smith further teaches of generating a switch controlling signal based on the switching pattern (column 5, lines 32 – 38; hopping patterns; obviously switched) at a predetermined time (column 12, lines 52 – 57) and switching the signal to a corresponding transmission antenna based on the switch controlling signal (column 11, lines 14 – 27).

11. Claims 9, 11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madhow et al. (Madhow, US Patent No 6,175,587) in view of Ames (Ames, US Patent No 5,233,626) and Smith et al (Smith, US Patent No 6,006,075).

Regarding claims 9 and 11, Madhow teaches of a channel receiving device in a mobile communication system, comprising of a pilot channel receiver for despreading a pilot channel signal from an input signal and estimating phase values (column 4, lines 44 – 49 and column 5, lines 21 – 25), a traffic channel receiver for detecting a channel signal based on the estimated time value, and correcting a phase error of the detected channel signal based on the estimated phase value, for demodulation (column1 lines 15 – 22 and starting column 4, line 66 ending column 5, line 5; note that different mulitpath signal arrive at different times and phases), and a reception controller for selecting the estimated phase (column 5, lines 24, - 25). Madhow does not teach of estimating time values, or of [selection of phase and time] with respect to the switching cycle pattern of the TSTD. In a related art, Ames teaches of controller that has the function to estimate chip time accuracy (column 6, lines 12 – 15). It would have been obvious to one skilled in the art at time of invention to have included into Madhow's controller the ability to

detect time as done in Ames's system. The motivation as being described by Ames, was to provide a valid time reference for the purpose of demodulation. In another related art, Smith teaches of a switched system that requires a switching pattern (hopping pattern) on the transmitter side (column 7, lines 31 – 41). It would have been obvious to one skilled in the art at the time of invention to have included into Ames and Madhow, Smith, as the receiver would require knowledge of the transmitted signal for reception (with timing, for coherent detection, or frequency ie hopping pattern).

12. Claims 10, 12, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Madhow et al. (Madhow, US Patent No 6,175,587) in view of Ames (Ames, US Patent No 5,233,626) in further view of Smith et al (Smith, US Patent No 6,006,075) in further view of Zehavi (Zehavi, US 6,185,199).

Regarding claims 10 and 12, Madhow in view of Ames, in further view of Smith teach all the claimed limitations as described in claims 9 and 11 respectively. Madhow further teaches of a demodulator for correcting a phase error of the orthogonal despread signal based on the estimated phase value (column 5, lines 21, - 25). Madhow in view of Ames, in further view of Smith do not teach of the traffic channel receiver comprises of a PN despreader for PN-despreading the input signal at a time position in accordance with the estimated time value and an orthogonal despreader for despreading the PN-despread signal by a corresponding channel orthogonal code. In a related art, Zeharvi teaches of multiplication by Walsh Codes (orthonormal codes) and then despreading with a PN code (see figure 6, described in column 10, lines 27 - 45). It would have been obvious to a person skilled in the art at the time of invention to have included into Madhow in view of Ames, in further view of Smith, Zehavi. The

motivation for such a combination, would be to create a receiver that could demodulate a signal produced by the transmitter suggested earlier (the combination of Smith in view of Zehavi).

Allowable Subject Matter

13. Claims 3, 4, 7, 8, 15, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 3 and 7, prior art provides numerous examples of controllers but failed to disclose ones that specifically had a reference cycle storage for storing a reference switching cycle value, a counter for counting clock pulses of a base station and outputting a counted value based on the reference switching cycle value a memory for storing a plurality of switching patterns and outputting one of the plurality of switching patterns based on the counted value and a control signal generator for generating the switch controlling signal according to the switching pattern selected from the memory.

Regarding claim 4 and 8, prior art provides numerous examples of memory modules but failed to disclose ones that specifically stores at least one of a sequential switching pattern, a random switching pattern, a switching pattern with a uniform switching cycle, and a switching pattern with a variable switching cycle, and the control signal generator generates the switch controlling signal with length equal to an integer multiple of an orthogonal code length.

Regarding claim 15, prior art describe numerous switch controllers but none that specifically comprises the steps of generating a reference switching cycle signal, counting clock pulses of a base station and outputting the counted value at the time point when the reference

switching cycle value is generated, outputting a switching pattern based on. the counted value, and generating the switch controlling signal according to the switching pattern.

Regarding claim 16, prior art describe switching patterns, but none that specifically teach of at least one of a sequential switching pattern, a random switching pattern, a switching pattern with a uniform switching cycle, and a switching pattern with a variable switching cycle, and the switch controlling signal is an integer multiple of an orthogonal code length.

14. Claims 22 and 26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claims 22 and 26, the present invention is of the memory stores at least one of a sequential switching pattern, a random switching pattern, a switching pattern with a uniform switching cycle, and a switching pattern with a variable switching cycle and the control signal generator generates the switch controlling signal with length equal to an integer multiple of an orthogonal code length. The closest prior art, Smith et al (Smith, US Patent No 6,006,075) teaches of a memory that stores switching patterns, but failed to teach of storing all of a random switching pattern, a switching pattern with a uniform switching cycle, and a switching pattern with a variable switching cycle [and the control signal generator generates the switch controlling signal with length equal to an integer multiple of an orthogonal code length].

Citation of Pertinent Prior Art

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Inventor	Publication	Number	Disclosure
Zehavi	US Patent	6,185,199	Method and Apparatus for

			Data Transmission Using Time Gated Frequency Division Duplexing
Madhow	US Patent	6,175,587	Communication Device and Method for Interference Suppression in a DS-CDMA System
Taki	US Patent	6,111,909	Wireless Communication System
Smith et al.	US Patent	6,006,075	Method and Apparatus For Transmitting Communication Signals Using Transmission Space and Frequency Diversity
Ames	US Patent	5,233,626	Repeater Diversity Spread Spectrum Communication System

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry, for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 9 - 6:30, Monday through Thursday and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (703) 305-4778. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Tanmay S Lele
Examiner
Art Unit 2681

NAY MAUNG
PRIMARY EXAMINER

tsl
December 30, 2002